Annexure-I: Salient Features of Labour & Environment Protection Laws[1]

A. Salient features of some major labour laws Applicable to establishments engaged in building and other construction work

(a) Employees Compensation Act 1923: The Act provides for compensation in case of injury, disease or death arising out of and during the course of employment.

(b) Payment of Gratuity Act 1972: gratuity is payable to an employee under the Act on satisfaction of certain conditions on separation if an employee has completed 5 years' service or more or on death at the rate of 15 days wages for every completed year of service. The Act is applicable to all establishments employing 10 or more employees.

(c) Employees P.F. and Miscellaneous Provision Act 1952 (*since amended*): The Act provides for monthly contribution by the employer plus workers @ 10% or 8.33%. The benefits payable under the Act are:

(i) Pension or family pension on retirement or death, as the case may be.
(ii) Deposit linked insurance on the death in harness of the worker.
(iii)Payment of P.F. accumulation on retirement/death etc.

(d) Maternity Benefit Act 1961: The Act provides for leave and some other benefits to women employees in case of confinement or miscarriage etc.

(e) Sexual Harassment of Women at the Workplace (Prevention, Prohibition and Redressal) Act, 2013: This Act defines sexual harassment in the workplace, provides for an enquiry procedure in case of complaints and mandates the setting up of an Internal Complaints Committee or a Local Complaints Committee

(f) Contract Labour (Regulation & Abolition) Act 1970: The Act provides for certain welfare measures to be provided by the Contractor to contract labour and in case the Contractor fails to provide, the same are required to be provided, by the Principal Employer by law. The Principal Employer is required to take Certificate of Registration and the Contractor is required to take license from the designated Officer. The Act is applicable to the establishments or Contractor of Principal Employer if they employ 20 or more contract labour.

(g) Minimum Wages Act 1948: The Employer is supposed to pay not less than the Minimum Wages fixed by appropriate Government as per provisions of the Act if the employment is a scheduled employment. Construction of Buildings, Roads, Runways are scheduled employments.

(h) Payment of Wages Act 1936: It lays down the mode, manner and by what date the wages are to be paid, what deductions can be made from the wages of the workers.

(i) Equal Remuneration Act 1976: The Act provides for payment of equal wages for work of equal nature to male and female workers and for not making discrimination against Female employees in the matters of transfers, training and promotions etc.

(j) Payment of Bonus Act 1965: The Act is applicable to all establishments employing 20 or more employees. Some of the State Governments have reduced this requirement from 20 to 10. The Act provides for payments of annual bonus subject to a minimum of 8.33% of the wages drawn in the relevant year. It applies to skilled or unskilled manual, supervisory, managerial, administrative, technical or clerical work for hire or reward to employees who draw a salary of Rs. 10,000/- per month or less. To be eligible for bonus, the employee should have

[1]This list is only illustrative and not exhaustive. Bidders and Contractors are responsible for checking the correctness and completeness of the list. The law as current on the date of bid opening will apply.

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worked in the establishment for not less than 30 working days in the relevant year. The Act does not apply to certain establishments.

(k) Industrial Disputes Act 1947: the Act lays down the machinery and procedure for resolution of Industrial disputes, in what situations, a strike or lock-out becomes illegal and what are the requirements for laying off or retrenching the employees or closing down the establishment.

(l) Trade Unions Act 1926: The Act lays down the procedure for registration of trade unions of workmen and employers. The Trade Unions registered under the Act have been given certain immunities from civil and criminal liabilities.

(m) Child Labour (Prohibition & Regulation) Act 1986: The Act prohibits employment of children below 14 years of age in certain occupations and processes and provides for regulation of employment of children in all other occupations and processes. Employment of Child Labour is prohibited in the Building and Construction Industry.

(n) Inter-State Migrant workmen's (Regulation of Employment & Conditions of Service) Act 1979: The Act is applicable to an establishment which employs 5 or more inter-state migrant workmen through an intermediary (who has recruited workmen in one state for employment in the establishment situated in another state). The Inter-State migrant workmen, in an establishment to which this Act becomes applicable, are required to be provided certain facilities such as housing, medical aid, travelling expenses from home upto the establishment and back, etc.

(o) The Building and Other Construction Workers (Regulation of Employment and Conditions of Service) Act 1996 and the Building and Other Construction Workers Welfare Cess Act, 1996 (BOCWW Cess Act): All the establishments who carry on any building or other construction work and employ 10 or more workers are covered under these Acts. All such establishments are required to pay cess at the rate not exceeding 2% of the cost of construction as may be notified by the Government. The Employer of the establishment is required to provide safety measures at the building or construction work and other welfare measures, such as Canteens, First –Aid facilities, Ambulance, Housing accommodations for workers near the work place etc. The Employer to whom the Act applies has to obtain a registration certificate from the Registering Officer appointed by the Government.

(p) Factories Act 1948: the Act lays down the procedure for approval of plans before setting up a factory engaged in manufacturing processes, health and safety provisions, welfare provisions, working hours, annual earned leave and rendering information regarding accidents or dangerous occurrences to designated authorities. It is applicable to premises employing 10 persons or more with aid of power or 20 or more persons without the aid of power.

(q) Weekly Holidays Act -1942

(r) Bonded Labour System (Abolition) Act, 1976: The Act provides for the abolition of bonded labour system with a view to preventing the economic and physical exploitation of weaker sections of society. Bonded labour covers all forms of forced labour, including that arising out of a loan, debt or advance.

(s) Employer's Liability Act, 1938: This Act protects workmen who bring suits for damages against employers in case of injuries endured in the course of employment. Such injuries could be on account of negligence on the part of the employer or persons employed by them in maintenance of all machinery, equipment etc. in healthy and sound condition.

(t) Employees State Insurance Act 1948: The Act provides for certain benefits to insured employees and their families in case of sickness, maternity and disablement arising out of an employment injury. The Act applies to all employees in factories (as defined) or establishments which may be so notified by the appropriate Government. The Act provides for the setting up of an Employees' State Insurance Fund, which is to be administered by the Employees State Insurance Corporation.

Contributions to the Fund are paid by the employer and the employee at rates as prescribed by the Central Government. The Act also provides for benefits to dependents of insured persons in case of death as a result of an employment injury.

(u) The Personal Injuries (Compensation Insurance) Act, 1963: This Act provides for the employer's liability and responsibility to pay compensation to employees where workmen sustain personal injuries in the course of employment.

(v) Industrial Employment (Standing Order) Act 1946: It is applicable to all establishments employing 100 or more workmen (employment size reduced by some of the States and Central Government to 50). The Act provides for laying down rules governing the conditions of employment by the Employer on matters provided in the Act and get the same certified by the designated Authority.

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B. Salient features of some of the major laws that are applicable for protection of environment

1. The Environment (Protection) Act, 1986 and as amended: This provides for the protection and improvement of environment and for matters connected therewith, and the prevention of hazards to human beings, other living creatures, plants and property. 'Environment' includes water, air and land and the inter-relationship which exists among and between water, air and land, and human beings, other living creatures, plants, micro-organism and property.

2. The Forest Conservation Act, 1980, as amended, and Forest (Conservation) Rules, 1981 as amended: These provides for protection of forests by restricting conversion of forested areas into non- forested areas and prevention of deforestation, and stipulates the procedures for cutting any trees that might be required by the applicable rules. Permissions under the Act also stipulates the norms and compliance requirements of the employer and any contractor on behalf of the employer.

3. State Tree Preservation Acts as may be in force: These provide for protection of trees of important species. Contractors will be required to obtain prior permission for full or partial cutting, uprooting, or pruning of any such trees.

4. The Wildlife (Protection) Act, 1972, and as amended: This provides for protection of wildlife through notifying National Parks and Sanctuaries and buffer areas around these zones; and to protect individuals of nationally important species listed in the Annex of the Act.

5. The Biological Diversity Act, 2002: This provides for conservation of biological diversity, sustainable use of components of biological diversity, and fair and equitable sharing of the benefits arising out of the use of biological resources, knowledge and for matters connected therewith or incidental thereto.

6. The Public Liability Insurance Act, 1991 as amended and The Public Liability Insurance Rules, 1991 as amended: These provide for public liability insurance for the purpose of providing immediate relief to the persons affected by accident occurring while handling hazardous substances and for mattes connected herewith or incidental thereto. Hazardous substance means any substance or preparation which is defined as hazardous substance under the Environment (Protection) Act 1986, and exceeding such quantity as may be specified by notification by the Central Government.

7. The Ancient Monuments and Archaeological Sites and Remains Act, 1958 and the Ancient Monuments and Archaeological Sites and Remains (Amendment and Validation) Act, 2010, the Ancient Monuments and Archaeological Sites and Remains Rules, 1959 amended 2011, the National Monuments Authority Rules, 2011 and the similar State Acts: These provide for conservation of cultural and historical remains found in India. Accordingly, area within the radii of 100m and 300m from the "protected property" are designated as "protected area" and "controlled area" respectively. No development activity (including building, mining, excavating, blasting) is permitted in the "protected area" and development activities likely to damage the protected property is not permitted in the "controlled area" without prior permission of the Archaeological Survey of India (ASI) or the State Departments of Art and Culture or Archaeology as applicable.

8. The Environmental Impact Assessment Notification, 2006 and as amended: This provides for prior environmental clearance for new, modernization and expansion projects listed in Schedule I of the Notification. Contractors will be required to ensure that no work starts until applicable clearances under the Notification is not available. Contractors will be responsible for implementation of any environmental management plan stipulated as per the permission under this Notification; and will be required to prepare and submit to the employer and compliance report stipulated in the permission under the Notification.

9. The Water (Prevention and Control of Pollution) Act, 1974 as amended, and the Water (Prevention and Control of Pollution) Rules, 1975 as amended: These provide for the prevention and control of water pollution and the maintaining and restoring of wholesomeness of water. 'Pollution' means such contamination of water or such alteration of the physical, chemical or biological properties of water or such discharge of any sewage or trade effluent or of any other liquid, gaseous or solid substance into water(whether directly or indirectly) as may, or is

likely to, create a nuisance or render such water harmful or injurious to public health or safety, or to domestic, commercial, industrial, agricultural or other legitimate uses, or to the life and health of animals or plants or of aquatic organisms. Contractors will need to obtain consent for establishment and consent for operation of any item of work or installation of equipment that generates waste water, and observe the required standards of establishment and operation of these items of work or installations; as well as install and operate all required waste water treatment facilities.

10. The Water (Prevention and Control of Pollution) Cess Act, 1977 and The Water (Prevention and Control of Pollution) Cess Rules, 1978: These provide for the levy and collection of a cess on water consumed by persons carrying on certain industries and by local authorities, with a view to augment the resources of the Central Board and the State Boards for the prevention and control of water pollution under the Water (Prevention and Control of Pollution) Act, 1974.

11. The Air (Prevention and Control of Pollution) Act, 1981 as amended, and the Air (Prevention and Control of Pollution) Rules, 1982: These provides for prevention, control and abatement of air pollution. 'Air Pollution' means the presence in the atmosphere of any 'air pollutant', which means any solid, liquid or gaseous substance (including noise) present in the atmosphere in such concentration as may be or tend to be injurious to human beings or other living creatures or plants or property or environment. Contractors will need to obtain consent for establishment and consent for operation of any item of work or installation of equipment that generates air pollution such as batching plants, hot mix plants, power generators, backup power generation, material handling processes, and observe the required standards of establishment and operation of these items of work or installations.

12. Noise Pollution (Control and Regulation) Rules, 2000, and as amended: This provides for standards for noise for day and night for various land uses and specifies special standards in and around sensitive receptors of noise such as schools and hospitals. Contractors will need to ensure compliance to the applicable standards, and install and operate all required noise control devices as may be required for all plants and work processes.

13. Chemical Accidents (Emergency Planning, Preparedness and Response) Rules, 1996: This provides for Requirement of preparation of on-site and off-site Disaster Management Plans for accident-prone areas.

14. The Explosives Act 1884 and the Explosives Rules, 2008: These provide for safe manufacture, possession, sale, use, transportation and import of explosive materials such as diesel, Oil and lubricants etc.; and also for regulating the use of any explosives used in blasting and/or demolition. All applicable provisions will need compliance by the contractors.

15. The Petroleum Rules, 2002: This provides for safe use and storage of petroleum products, and will need to be complied by the contractors.

16. The Gas Cylinder Rules 2004 and amendments: This provides for regulations related to storage of gas, and possession of gas cylinder more than the exempted quantity. Contractors should comply with all the requirements of this Rule.

17. Manufacture, Storage and Import of Hazardous Chemical Rules of 1989 and as amended: These provide for use and storage of hazardous material such as highly inflammable liquids like HSD/LPG. Contractors will need to ensure compliance to the Rules; and in the event where the storage quantity exceeds the regulated threshold limit, the contractors will be responsible for regular safety audits and other reporting requirements as prescribed in the Rules.

18. Hazardous & Other Wastes (Management and Transboundary Movement) Rules, 2016: These provide for protection of general public from improper handling storage and disposal of hazardous waste. The rules prescribe the management requirement of hazardous wastes from its generation to final disposal. Contractors will need to obtain permission from the State Pollution Control Boards and other designated authorities for storage and handling of any hazardous material; and will to ensure full compliance to these rules and any conditions imposed in the permit.

19. The Bio Medical Waste Management Rules, 2016: This provides for control, storage, transportation and disposal of bio-medical wastes. As and where the contractor has any first aid facility and dispensaries, established in either

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temporary or permanent manner, compliance to these Rules are mandatory.

20. Construction and Demolition Waste Management Rules, 2016: This provides for management of construction and demolition waste (such as building materials possible to be reused, rubble and debris or the like); and applies to all those waste resulting from construction, re-modelling, repair or demolition of any civil structure. Contractor will need to prepare a waste disposal plan and obtain required approval from local authorities, if waste generation is more than 20 tons in any day or 300 tons in any month during the contract period; and ensure full compliance to these rules and any conditions imposed in the regulatory approval.

21. The E-Waste (Management) Rules, 2016: This provides for management of E-wastes (but not covering lead acid batteries and radio-active wastes) aiming to enable the recovery and/or reuse of useful material from e-waste, thereby reducing the hazardous wastes destined for disposal and to ensure the environmentally sound management of all types of waste of electrical and electronic equipment. This Rule applies to every manufacturer, producer, consumer, bulk consumer, collection centers, dealers, e-retailer, refurbisher, dismantler and recycler involved in manufacture, sale, transfer, purchase, collection, storage and processing of e-waste or electrical and electronic equipment listed in Schedule I, including their components, consumables, parts and spares which make the product operational.

22. Plastic waste Management Rules, 2016: This provides for control and management of the plastic waste generated from any activity. Contractors will ensure compliance to this Rule.

23. The Batteries (Management and Handling) Rules 2001: This provides for ensuring safe disposal and recycling of discarded lead acid batteries likely to be used in any equipment during construction and operation stage. Rules require proper control and record keeping on the sale or import of lead acid batteries and recollection of the used batteries by registered recyclers to ensure environmentally sound recycling of used batteries. Contractors will ensure compliance to this Rule.

24. The Ozone Depleting Substances (Regulation and Control) Rules, 2000 and as amended: This provides for regulation of production and consumption of ozone depleting substances in the country, and specifically prohibits export to or import from countries not specified in the Rules, and prohibits unless specifically permitted, any use of ozone depleting substance.

25. The Coastal Regulation Zone Notifications, 1991 and as amended: This provides for regulation of development activities within the 500m of high tide line in coastal zone and 100m of stretches of rivers and estuaries influenced by tides. Contractors will be required to ensure that no work starts until applicable clearances under the Notification is not available. Contractors will be responsible for implementation of any plan stipulated as per the permission under this Notification; and will be required to prepare and submit to the employer and compliance report stipulated in the permission under the Notification.

26. The Motor Vehicle Act 1988 as amended (and State Motor Vehicle Acts as may be in force) and the Motor Vehicle Rules, 1989, and as amended (and State Motor Vehicle Rules as may be in force): To minimize the road accidents, penalizing the guilty, provision of compensation to victim and family and check vehicular air and noise pollution. Contractors will be required to ensure full compliance to these rules.

27. Easement Act, 1882: This provides for the rights of landowners on groundwater. Contractors will need to ensure that other landowners' rights under the Act is not affected by any groundwater abstraction by the contractors.

28. State Groundwater Acts and Rules as may be in force and the Guidelines for Groundwater Abstraction for drinking and domestic purposes in Notified Areas and Industry/Infrastructure project proposals in Non-Notified areas, 2012: These provide for regulating extraction of ground water for construction/industrial and drinking and domestic purposes. Contractors will need to obtain permission from Central/State Groundwater Boards prior to groundwater abstraction through digging any bore well or through any other means; and will to ensure full compliance to these rules and any conditions imposed in the permit.

29. The Mines Act, 1952 as amended; the Minor Mineral and concession Rules as amended; and the State Mineral (Rights and Taxation) Acts as may be in force: These provide for for safe and sound mining activity. The contractors will procure aggregates and other building materials from quarries and borrow areas approved under such Acts. In the event the contractors open any new quarry and/or borrow areas, appropriate prior permission

from the State Departments of Minerals and Geology will need to be obtained. Contractors will also need to ensure full compliance to these rules and any conditions imposed in the permit.

30. The Insecticides Act, 1968 and Insecticides Rules, 1971 and as amended: These provide for regulates the manufacture, sale, transport, distribution, export, import and use of pesticides to prevent risk to human beings or animals, and for matters connected therewith. No one should import or manufacture; sell, stock or exhibit foe sale; distribute, transport, use: (i) any misbranded insecticides, (ii) any insecticide the sale, distribution or use of which is for the time being prohibited under the Act; and (iii) any insecticide except in accordance with the condition on which it was registered under the Act.

31. National Building Codes of India, 2005 and as amended: This provides guidelines for regulating the building construction activities in India. The code mainly contains administrative regulations, development control rules and general building requirements; stipulations regarding materials, structural design and construction; and building and plumbing services. Contractors will be required to comply with all Bureau of Indian Standards Codes dealing with: (i) use and disposal of asbestos containing materials in construction; (ii) paints containing lead; (iii) permanent and temporary ventilations in workplace; (iv) safety, and hygiene at the workplace; (v) prevention of fire; (vi) prevention of accidents from faulty electrical gadgets, equipment and accessories; and all other such codes incidental to the Contract.

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Annexure II: Environmental and Social Impact Mitigation/ Management

The Project has carried out/ will be carrying out, Environmental and Social Assessments, an Environmental Management Plan (EMP) and a Social Management Plan (SMP) have been/ will be developed. The provisions of the EMP and the SMP needs to be followed. For every subproject specific EMP and SMP are developed so as to mitigate the risks identified during impacts assessment. A generic EMP has been presented in Annex III and a SMP in Annex IV below for reference as sample guide and a Bills of Quantities in Annex V for quotes to be given by contractor.

EMP and SMP in Bid Documents

Preparation of EMP and SMP cost estimates (EMP and SMP Budget) needs to be incorporated in the Bid Documents. Penalty Clauses for not complying with EMP and SMP requirements shall be incorporated. Indicative penalty clauses proposed in the project are presented below

Clause for Non - Compliance to EMP and SMP

The Contractor shall implement all mitigation/ management measures for which responsibility is assigned as stipulated in the EMP and SMP. Any lapse in implementing the same will attract the penalty as detailed below:

- All Non-Compliances in obtaining clearances/ permissions under statutory requirements and violations of any regulations with regard to eco-sensitive areas shall be treated as a major lapse
- Any complaints of public, within the scope of the Contractor, formally registered with the BESCOM communicated to the Contractor, which is not properly addressed within the time period intimated by the BESCOM shall be treated as a major lapse.
- Non-conformity to any of the mitigation/ management measures stipulated in the EMP and SMP (other than stated above) shall be considered as a minor lapse.
- On observing any lapses, BESCOM shall issue a notice to the Contractor, to rectify the same.
- Any minor lapse for which notice was issued and not rectified, first and second reminders shall be given after ten days from the original notice date and first reminder date respectively. Any minor lapse, which is not rectified, shall be treated as a major lapse from the date of issuing the second reminder.
- If a major lapse is not rectified upon receiving the notice BESCOM shall invoke reduction, in the subsequent interim payment certificate.
- For any non-compliance with regard to major lapses, 10% of the interim payment will be withheld, subject to a maximum amount 5% of the contract value/

If the lapses are not rectified within one month or as specified by the client, the amount withheld will be forfeited subject to maximum of 1% of contract value.

Annexure III: Generic Environment Management Plan – Guidance

Sr. No.	Issues/ Impacts	Mitigation Measures	When	Responsibility		
				Execution	Supervision	Monitoring
1.	Utility Relocation and common property resources	▪ In case of utilities and common property resources being impacted due to the project, they will be relocated with prior approval of the concerned agencies before construction starts, on any sub-section of the project road. ▪ The relocation site identification will be in accordance with the choice of the community.	Pre-construction	Contractor	BESCOM	Project Monitoring Consultant (PMC)/ BESCOM
2.	Relocation of Cultural Property	▪ In case there is an impact on cultural properties, they will be relocated at suitable locations, as desired by the community before construction starts. ▪ Local Community meetings, will be held to discuss relocation aspects, siting of structures etc.	Pre-construction	Contractor	BESCOM	PMC/BESCOM
3.	Site clearance	▪ Site clearance will be done only in the area required for the sub-project.	Pre-construction	Contractor	BESCOM	PMC/BESCOM
4.	Tree Cutting	▪ Trees will generally not be removed unless they is a safety hazard. ▪ Removal of trees shall be done only after the permissions/approvals are obtained from concerned regulatory authorities. ▪ Disposal of cut trees is to be done immediately to ensure that the traffic movement is not disrupted.	Pre-construction	Contractor	BESCOM	PMC/BESCOM
5.	Debris disposal site identification	▪ Site for temporary storage and disposal of debris refuse to be identified in consultation with local Gram Panchayat / Municipality/ Corporation. ▪ These disposal sites shall be finalized such that they are not located within any designated forest or other eco-sensitive areas, does not impact natural drainage courses and no endangered / rare flora is impacted by such disposal. ▪ Pre-designated sites for disposal could be used with prior permission from BESCOM.	Pre-Construction	Contractor	BESCOM	PMC/BESCOM
6.	Joint Field Verification	▪ The Engineer and the Contractor will carry out joint field verification of the EMP.	Pre-Construction	Contractor	BESCOM	PMC/BESCOM

S.No	Issues/Impacts	Mitigation Measures	Project Phase	Responsibility		
				Execution	Supervision	Monitoring
		▪ The efficacy of the mitigation measures suggested in the EMP will be checked.				
7.	Modification of the Contract Documents	▪ If required, the Engineer will modify the EMP and Contract documents (particularly the BOQs).	Pre-construction	Contractor	BESCOM	PMC/BESCOM
8.	Crushers, Hot-mix plants, Drum-mix plants & Batching Plants	▪ Specifications hot mix plants and batching plants (existing or new) will comply with the requirements of the relevant national, state and local pollution control requirements as per Environment Protection Act 1986, Air (Prevention and Control of Pollution) Act, 1981 and Noise Pollution (Regulation and Control) Rules, 2000. ▪ Hot mix plants and batching plants will be sited sufficiently away from habitation, agricultural operations or industrial establishments. ▪ Such plants will be located at least 1000 m away from the nearest habitation, preferably in the downwind direction.	Pre-Construction	Contractor	BESCOM	PMC/BESCOM
9.	Other Construction Vehicles, Equipment and Machinery	▪ The discharge standards promulgated under the Environment Protection Act, 1986 will be strictly adhered to. ▪ All vehicles, equipment and machinery to be procured for construction will conform to the relevant Bureau of Indian Standard (BIS) norms. ▪ Noise limits for construction equipment to be procured such as compactors, rollers, front loaders, concrete mixers, cranes (moveable), vibrators and saws will not exceed 75 dB (A), measured at one meter from the edge of the equipment in free field, as specified in the Environment (Protection) Rules, 1986.	Pre-Construction	Contractor	BESCOM	PMC/BESCOM
10.	Material sourcing (sand, borrow material and stone material)	▪ Procurement of construction material only from permitted sites and licensed / authorized quarries. ▪ Farm land and forest belts shall not be used for material sourcing or borrow sites. ▪ Arable land shall not be selected as borrow sites as much as possible. ▪ If excavation has to be done in arable land, top soil layer (30	Pre-Construction	Contractor	BESCOM	PMC/BESCOM

S.No	Issues / Impacts	Mitigation Measures	Project phase	Responsibility		
				Execution	Supervision	Monitoring
		cm) shall be saved and returned after construction work is completed, so as to minimize impacts.				
11.	Quarries	▪ The Contractor will identify materials from existing licensed quarries with the suitable materials for construction. ▪ Apart from approval of the quality of the quarry materials, the Engineer's representative will verify the legal status of the quarry operation. ▪ The quarry operations will be undertaken within the rules and regulations in force.	Pre-Construction	Contractor	BESCOM	PMC/BESCOM
12.	Water	▪ The Contractor will be responsible for arranging adequate supply of water for the entire construction period. ▪ The contractor shall consult the local people before finalizing the locations. ▪ The contractor will preferentially source all water requirements from surface water bodies. ▪ The contractor will be allowed to pump only from the surface water bodies. ▪ Boring of any tube wells will be prohibited. ▪ Any groundwater to be extracted requires permission from concerned authorities and BESCOM. ▪ The contractor will minimize wastage of water during construction.	Pre-construction	Contractor	BESCOM	PMC/BESCOM
13.	Sand	The contractor will identify sand quarries with requisite approvals for the extraction of sand from Department of Mines and Geology as per The Mines and Minerals (Development and Regulation) Act, and Minor Mineral Concession rules of Karnataka	Pre-construction	Contractor	BESCOM	PMC/BESCOM
14.	Labour Requirements	▪ The contractor will use unskilled labour drawn from local communities to avoid any additional stress on the existing facilities (medical services, power, water supply, etc.) ▪ Planning of labour camps, if required, needs to be done to ensure adequate water supply, sanitation and drainage etc., in conformity with the "The Building and Other Construction Workers (Regulation of Employment and Conditions of	Mobilization	Contractor	BESCOM	PMC/BESCOM

S. No.	Issues/Impacts	Mitigation Measures	Project Phase	Responsibility for Execution	Responsibility for Supervision	Responsibility for Monitoring
		Service) Act, 1996"				
15.	Generation of Debris from dismantling of pavement structures	▪ Debris generated due to the dismantling of the existing pavement structure shall be suitably reused in the proposed construction, subject to the suitability of the material and the approval of the Engineer. ▪ The contractor shall suitably dispose unutilized debris material; either through filling up of borrows areas created for the project or at pre-designated dump locations, subject to the approval of the Engineer. ▪ Debris generated from pile driving or other construction activities shall be disposed such that it does not flow into the surface water bodies or form mud puddles in the area. ▪ Dumping sites shall be identified by the contractor as per regulations in force. The identified locations will be reported to the Engineer.	Construction	Contractor	BESCOM	PMC/BESCOM
16.	Bituminous wastes disposal	▪ The disposal of residual bituminous wastes will be done by the contractor at secure landfill sites, with the requisite approvals for the same from the concerned government agencies, as per the Acts and Laws in force.	Construction	Contractor	BESCOM	PMC/BESCOM
17.	Non-bituminous construction wastes disposal	▪ Location of disposal sites will be finalized prior to beginning of the earthworks on any particular section of the road. ▪ The Engineer shall approve these disposal sites conforming to the following (a) These are not located within designated forest areas. (b) The dumping does not impact natural drainage courses (c) No endangered/rare flora is impacted by such dumping. (d) Settlements are located at least 1.0 km away from the site. (e) Not located 1 Km within any mangrove vegetation/ecologically sensitive areas.	Construction	Contractor	BESCOM	PMC/BESCOM
18.	Stripping, stocking and preservation of top soil	▪ The topsoil from borrow areas, areas of cutting and areas to be permanently covered will be stripped to a specified depth of 150 mm and stored in stockpiles. ▪ At least 10% of the temporarily acquired area will be earmarked for storing topsoil.	Construction	Contractor	BESCOM	PMC/BESCOM

S.No.	Issues / Impacts	Mitigation Measures	Phase	Responsibility		
				Implementation	Supervision	Monitoring
		▪ The stockpile will be designed such that the slope does not exceed 1:2 (vertical to horizontal), and the height of the pile is to be restricted to 2m. ▪ Stockpiles will not be surcharged or otherwise loaded and multiple handling will be kept to a minimum to ensure that no compaction will occur. ▪ The stockpiles will be covered with suitable blue sheets or gunny bags or tarpaulin. ▪ It will be ensured by the contractor that the topsoil will not be unnecessarily trafficked either before stripping or when in stockpiles. ▪ Such stockpiled topsoil will be returned to cover the disturbed area and cut slopes. ▪ The management of topsoil shall be reported regularly to the Engineer.				
19.	Blasting	▪ Except as may be provided in the contract or ordered or authorized by the Engineer, the Contractor will not use explosives. ▪ Where the use of explosives is so provided or ordered or authorized, the Contractor will comply with the requirements of the regulations in force besides the law of the land as applicable. ▪ The Contractor will at all times take every possible precaution and will comply with appropriate laws and regulations relating to the importation, handling, transportation, storage and use of explosives and will, at all times when engaged in blasting operations, post sufficient warning flagmen, to the full satisfaction of the Engineer. ▪ The Contractor will at all times make full liaison with and inform well in advance and obtain such permission as is required from all Government Authorities, public bodies and private parties whomsoever concerned or affected or likely to be concerned or affected by blasting operations. ▪ Blasting shall be carried out with prior information to the Engineer and only after obtaining permission from the District	Construction	Contractor	BESCOM	PMC/BESCOM

S. No.	Issues / Impacts	Mitigation Measures	Project Phase	Responsibility		
				Execution	Supervision	Monitoring
		Police authorities (Superintendent of Police). ▪ All the statutory laws, regulations, rules etc., pertaining to acquisition, transport, storage, handling and use of explosives will be strictly followed. ▪ Blasting will be carried out during fixed hours (preferably during mid-day), as permitted by the Authorities / Engineer. ▪ The timing should be made known to all the people within 1000 m (200 m for pre-splitting) from the blasting site in all directions.				
20.	Transporting Construction Materials	▪ All vehicles delivering materials to the site will be covered to avoid spillage of materials. ▪ All existing highways and roads used by vehicles of the contractor, or any of his sub -contractor or suppliers of materials or plant and similarly roads which are part of the works will be kept clean and clear of all dust/mud or other extraneous materials dropped by such vehicles. ▪ The unloading of materials at construction sites close to settlements will be restricted to daytime only. ▪ For any unloading at night, written permission shall be obtained from the concerned authorities	Construction	Contractor	BESCOM	PMC/BESCOM
21.	Planning Traffic Diversions & Detours	▪ Temporary diversions will be constructed with the approval of the Engineer. Detailed Traffic Control Plans will be prepared and submitted to the Engineer for approval, 5 days prior to commencement of works on any section of road. ▪ Prior to creating diversions and detours the citizens should be consulted well in advance through citizen's meetings. ▪ The traffic control plans shall contain details of temporary diversions, details of arrangements for construction under traffic, details of traffic arrangement after cessation of work each day, safety measures for transport of hazardous material and arrangement of flagmen. ▪ Environmental personnel of the Contractor will assess the environmental impacts associated as the loss of vegetation, productive lands and the arrangement for temporary diversion	Construction	Contractor	BESCOM	PMC/BESCOM

S. No.	Issues / Impacts	Mitigation Measures	Phase	Responsibility		
				Execution	Supervision	Monitoring
		of the land prior to the finalization of diversions and detours. ▪ Special consideration will be given to the preparation of the traffic control plan for safety of pedestrians and workers at night. ▪ The Contractor will ensure that the diversion/detour is always maintained in running condition, particularly during the monsoon to avoid disruption to traffic flow. ▪ He shall inform local community of changes to traffic routes, conditions and pedestrian access arrangements. ▪ The temporary traffic detours will be kept free of dust by frequent application of water. ▪ Traffic controls and diversions marked with signs, lights and other measures (flags) should be provided. ▪ It should be an informed decision taken through public participation. Diversion works to be dismantled to restore the area to original condition after completion of construction.				
22.	Infrastructure provisions at construction camps	▪ The Contractor during the progress of work will provide, erect and maintain necessary (temporary) living accommodation and ancillary facilities for labour to standards and scales approved by the Engineer. ▪ There shall be provided within the precincts of every workplace, latrines and urinals in an accessible place, and the accommodation, separately for each for these, as per standards set by the Building and other Construction Workers (regulation of Employment and Conditions of Service) Act, 1996. ▪ Except in workplaces provided with water-flushed latrines connected with a water borne sewage system ready for use bio-toilets , all latrines shall be provided with dry-earth system (receptacles) which shall be cleaned at least four times daily and at least twice during working hours and kept in a strict sanitary condition. ▪ Receptacles shall be tarred inside and outside at least once a year. ▪ If women are employed, separate latrines and urinals,	Construction	Contractor	BESCOM	PMC /BESCOM

S. No.	Issues / Impacts	Mitigation Measures	Project Phase	Responsibility		
				Execution	Supervision	Monitoring
		screened from those for men (and marked in the vernacular) shall be provided. ▪ There shall be adequate supply of water, close to latrines and urinals. ▪ All temporary accommodation must be constructed and maintained in such a fashion that uncontaminated water is available for drinking, cooking and washing. ▪ The sewage system for the camp must be designed, built and operated so that no health hazard occurs and no pollution to the air, ground or adjacent watercourses takes place. Compliance with the relevant legislation must be strictly adhered to. ▪ Garbage bins must be provided in the camp shall be regularly emptied and the garbage disposed in a hygienic manner, in consultation with the local Gram Panchayats / Municipalities/ Corporation, at designated sites. ▪ Separate bins shall be placed for kitchen waste, plastic waste, glass ware and metals duly labeling with stickers. ▪ Construction camps are to be sited at least 1000 m away from the nearest habitation and adequate health care is to be provided for the work force. ▪ Unless otherwise arranged for by the local sanitary authority, arrangement for disposal of excreta by putting a layer of night soils at the bottom of a permanent tank prepared for the purpose shall be taken up by the contractor. ▪ It should be covered with 15 cm layer of waste or refuse and then with a layer of earth for a fortnight (by then it will turn into manure).				
23.	Operation of construction equipment and vehicles	▪ All vehicles and equipment used for construction will be fitted with exhaust silencers. During routine servicing operations, the effectiveness of exhaust silencers will be checked and if found to be defective will be replaced. ▪ Noise limits for construction equipment used in this project (measured at one meter from the edge of the equipment in free field) such as compactors, rollers, front loaders, concrete	Construction	Contractor	BESCOM	PMC/BESCOM

SL. No.	Issues / Impacts	Mitigation Measures	Project Phase	Responsibility for Implementation	Responsibility for Supervision	Responsibility for Monitoring
		mixers, cranes (moveable), vibrators and saws will not exceed 75 dB(A), as specified in the Environment (Protection) Rules, 1986 ▪ Notwithstanding any other conditions of contract, noise level from any item of plant(s) must comply with the relevant legislation for levels of noise emission. ▪ The contractor will ensure that the AAQ concentrations at these construction sites are within the acceptable limits of industrial uses in case of hot mix plants and crushers and residential uses around construction camps. ▪ Dust screening vegetation will be planted on the edge of the RoW for crushers. ▪ Monitoring of the exhaust gases and noise levels will be carried out by the agency identified for Environmental Monitoring for the project.				
24.	Material Handling at Site	▪ All workers employed on mixing asphaltic material, cement, lime mortars, concrete etc., will be provided with protective footwear and protective goggles. ▪ Workers, who are engaged in welding works, would be provided with welder's protective eye-shields. ▪ Workers engaged in stone breaking activities will be provided with protective goggles and clothing and will be seated at sufficiently safe intervals. ▪ The use of any herbicide or other toxic chemical will be strictly in accordance with the manufacturer's instructions. ▪ The Engineer will be given at least 6 working days' notice of the proposed use of any herbicide or toxic chemical. ▪ A register of all herbicides and other toxic chemicals delivered to the site will be kept and maintained up to date by the Contractor. ▪ The register will include the trade name, physical properties and characteristics, chemical ingredients, health and safety hazard information, safe handling and storage procedures, and emergency and first aid procedures for the product. ▪ No person below the age of 14 years and no woman will be	Construction	Contractor	BESCOM	PMC/BESCOM

S. No.	Issues/Impacts	Mitigation Measures	Project Phase	Responsibility		
				Execution	Supervision	For Monitoring
		employed on the work of painting with products containing lead in any form as per The Child Labour (Prohibition and Regulation) Act of 1986. ▪ No paint containing lead or lead products will be used except in the form of paste or readymade paint. ▪ Face masks will be supplied for use by the workers when paint is applied in the form of spray or a surface having lead paint dry rubbed and scrapped.				
25.	Precautionary/Safety Measures During Construction	▪ All relevant provisions of the Factories Act, 1948 and the Building and other Construction Workers (regulation of Employment and Conditions of Service) Act, 1996 will be adhered to. ▪ Adequate safety measures for workers during handling of materials at site will be taken up. ▪ The contractor has to comply with all regulations regarding safe scaffolding, ladders, working platforms, gangway, stairwells, excavations, trenches and safe means of entry and egress.	Construction	Contractor	BESCOM	PMC/BESCOM
26.	Protection of Religious Structures and Shrines	▪ All necessary and adequate care shall be taken to minimize impact on cultural properties (which includes cultural sites and remains, places of worship including temples, mosques, churches and shrines, etc., graveyards, monuments and any other important structures as identified during design and all properties/sites/remains notified under the Ancient Sites and Remains Act). ▪ No work shall spillover to these properties, premises and precincts. ▪ Access to such properties from the road shall be maintained clear and clean.	Construction	Contractor	BESCOM	PMC/BESCOM
27.	Dust contamination at construction sites and along theroads	▪ Unpaved haul roads near/passing through residential and commercial areas to be watered thrice a day. ▪ Trucks carrying construction material to be adequately covered. ▪ All earthworks will be protected in a manner acceptable to the	Construction	Contractor	BESCOM	PMC/BESCOM

S. No.	Issues / Impacts	Mitigation Measures	Phase	Responsibility for Implementation	Responsibility for Supervision	Responsibility for Monitoring
		Engineer to minimize generation of dust. ▪ The contractor will take every precaution to reduce the level of dust along construction sites involving earthworks, by frequent application of water.				
28.	Earth work Excavations	▪ Ensure unobstructed natural drainage through proper drainage channels/structures. Dispose surplus excavated earth at identified sites. Ensure minimum hindrance to normal local activities and business. ▪ Avoid damage to permanent structures. ▪ All excavations will be done in such a manner that the suitable materials available from excavation are satisfactorily utilized as decided upon beforehand. ▪ The excavations shall conform to the lines, grades, side slopes and levels shown in the drawings or as directed by the engineer. ▪ While planning or executing excavation the contractor shall take all adequate precautions against soil erosion, water pollution etc. and take appropriate drainage measures to keep the site free of water, through use of mulches, grasses, slope drains and other devices. ▪ The contractor shall take adequate protective measures to see that excavation operations do not affect or damage adjoining structures and water bodies. ▪ For safety precautions guidance may be taken from IS: 3764.	Construction	Contractor	BESCOM	PMC/BESCOM
29.	Earth fill	▪ Embankment and other fill areas, unless otherwise permitted by the Engineer, be constructed evenly over their full width and the contractor will control and direct movement of construction vehicles and machinery over them	Construction	Contractor	BESCOM	PMC/BESCOM
30.	Slope protection and control of erosion	▪ Embankments and other areas of unsupported fill will not be constructed with steeper side slopes, or to greater widths than those shown in design drawings. ▪ While planning or executing excavations the Contractor will take all adequate precautions against soil erosion as per regulations.	Construction	Contractor	BESCOM	PMC/BESCOM

S.No.	Issues/Impacts	Mitigation Measures	Project Phase	Responsibility		
				Execution	Supervision	Monitoring
		▪ Turfing on critical road embankment slopes with grass sods, in accordance with the recommended practice for treatment of embankment slopes for erosion control. ▪ The work will be taken up as soon as possible provided the season is favorable for the establishment of sods. Other measures of slope stabilization will include mulching, netting and seeding of batters and drains immediately on completion of earthworks. ▪ Dry stone pitching for apron and revetment will be provided for bridges and cross drainage structures.				
31.	Drainage requirements at construction sites	▪ In addition to the design requirements, the contractor will take all desired measures as directed by the Engineer such measures to prevent temporary or permanent flooding of the site or any adjacent area.	Construction	Contractor	BESCOM	PMC/BESCOM
32.	Contamination of soil	▪ Vehicle/machinery and equipment operation, maintenance and refueling will be carried out in such a fashion that spillage of fuels and lubricants does not contaminate the ground. ▪ Oil interceptors will be provided for vehicle parking, wash down and refueling areas within the construction camps. ▪ Fuel storage will be in proper bunded areas. ▪ All spills and collected petroleum products will be disposed in accordance with MoEF and SPCB guidelines. ▪ Fuel storage and refilling areas will be located at least 1000m from rivers and irrigation ponds or as directed by the Engineer. ▪ In all fuel storage and refueling areas, if located on agricultural land or areas supporting vegetation, the topsoil will be stripped, stockpiled and returned after cessation of such storage and refueling activities.	Construction	Contractor	BESCOM	PMC/BESCOM
33.	Compaction of soil	▪ To minimize soil compaction construction vehicle, machinery and equipment will move or be stationed in designated area (RoW or CoI, haul roads as applicable) only. ▪ The haul roads for construction materials should be routed to avoid agricultural areas.	Construction	Contractor	BESCOM	PMC/BESCOM

S. No.	Issues / Impacts	Mitigation Measures	Period	Responsibility		
				Execution	Supervision	Monitoring
34.	Silting, Contamination of Water bodies	▪ Silt fencing will be provided around stockpiles at the construction sites close to water bodies. ▪ The fencing needs to be provided prior to commencement of earthworks and continue till the stabilization of the embankment slopes, on the particular sub-section of the road. Construction materials containing fine particles will be stored in an enclosure such that sediment-laden water does not drain into nearby watercourses. ▪ All discharge standards promulgated under Environmental Protection Act, 1986, will be adhered to. ▪ All liquid wastes generated from the site will be disposed as acceptable to the Engineer.	Construction	Contractor	BESCOM	PMC/BESCOM
35.	Cutting/Filling of Surface water bodies	▪ Earth works shall be undertaken such that the existing embankments of water bodies are not disturbed. In case of cutting of embankments, the same shall be reconstructed with appropriate slope protection measures and adequate erosion control measures. ▪ Filling of surface water bodies will be compensated by digging an equal volume of soil for water storage. ▪ Such dug-up soil will be used for spreading as topsoil. ▪ Wherever digging is undertaken, the banks will be protected as designed or as approved by the Engineer. ▪ The excavation will be carried out in a manner so that the side slopes are no steeper than 1 vertical to 4 horizontal, otherwise slope protection work, as approved by the Engineer will be provided. ▪ As far as practicable, and as approved by the Engineer, excavation for replacement of water bodies will be at the closest possible place/location, with respect to the original water body or part thereof consumed by filling.	Construction	Contractor	BESCOM	PMC/BESCOM
36.	Sub-Base & Base	▪ The contractor will take all necessary measures/ precautions to ensure that the execution of works and all associated operations are carried out in conformity with statutory and regulatory environmental requirements.	Construction	Contractor	BESCOM	PMC/BESCOM

S.No	Issues/ Impacts	Mitigation Measures	Project phase	Responsibility for Implementation	Responsibility for Supervision	Responsibility for Monitoring
		▪ The contractor will plan and provide for remedial measures to be implemented in event of occurrence of emergencies such as spillage of oil or bitumen or chemicals. ▪ The contractor will provide the Engineer with a statement of measures that he intends to implement in event of such an emergency, which will include a statement of how he intends to adequately train personnel to implement such measures. ▪ Adequate safety measures for workers during handling of materials at site will be taken up. ▪ The contractor will take every precaution to reduce the level of dust along construction sites by frequent application of water as per regulations. ▪ Noise levels from all vehicles and equipment used for construction will conform to standards as specified. Construction activities involving equipment with high noise levels will be restricted to the daytime. ▪ Transport of materials for construction will be as specified. The contractor will provide for all safety measures during construction as per rules and regulations in force.				
37.	Surfacing	▪ The contractor will take all necessary means to ensure that all surfacing works and all associated operations are carried out in conformity with regulations. ▪ All workers employed on mixing asphaltic material etc. will be provided with protective footwear as specified. Noise levels from all vehicles and equipment used for surfacing will conform to standards as specified. ▪ Construction activities involving equipment with high noise levels will be restricted to the daytime. ▪ Transport of materials for construction will be as specified. The contractor will provide for all safety measures during construction as per rules and regulations in force.	Construction	Contractor	BESCOM	PMC/BESCOM
38.	Mitigation Measures for Noise Sensitive Receptors	▪ Noisy construction operations in residential and sensitive areas (hospitals, schools and religious places) should be restricted between 7.30 a.m. to 6.00 p.m. to avoid disturbance to local community as per The Noise Pollution (Regulation	Construction	Contractor	BESCOM	PMC/BESCOM

S. No	Issues / Impacts	Mitigation Measures	Project Phase	Responsibility		
				Execution	Supervision	Monitoring
		and Control) Rules, 2000 ▪ Preventive maintenance of construction equipment and vehicles would be done to meet emission standards and to keep them with low noise. ▪ Provision of ear plugs to operators of heavy machinery and workers in near vicinity. ▪ During night, material transport should be uniformly distributed to minimize noise impacts.				
39.	Disposal of construction debris	▪ Daily inspection at haul roads and sites for construction debris for safe collection and disposal to land fill sites. Collection and disposal of refuse. ▪ Minimize construction debris by balancing cut and fill requirements, if relevant.	Construction	Contractor	BESCOM	PMC/BESCOM
40.	Adjoining water bodies	▪ Provide slope protection works of water bodies, if any, abutting the road.	Construction	Contractor	BESCOM	PMC/BESCOM
41.	Bridge Works & Culverts	▪ While working across or close to the rivers, avoid obstructing the flow of water. ▪ If an obstruction is required, to serve notice on the downstream users of water sufficiently in advance. ▪ Construction over and close to the non-perennial streams will be undertaken in the dry season. ▪ Construction work expected to disrupt users and impacting community water bodies will be taken up after serving notice on the local community. ▪ Dry stone pitching for apron and revetment will be provided for bridges and cross drainage structures, if necessary.	Construction	Contractor	BESCOM	PMC/BESCOM
42.	Safety practices during construction	▪ The Contractor is required to comply with all the precautions as required for the safety of the workers as per the International Labour Organization (ILO) Convention No. 62 as far as those are applicable to this contract. ▪ The contractor has to comply with all regulation regarding, working platforms, excavations, trenches and safe means of entry and egress.	Construction	Contractor	BESCOM	PMC/BESCOM

S. No.	Issues / Impacts	Mitigation Measures	Project Phase	Responsibility		
				Execution	Supervision	Monitoring
43.	Aesthetic impairment	▪ Aesthetic enhancement through proper housekeeping of construction sites. ▪ Disposal of construction wastes at the approved disposal sites. ▪ Immediate closure of the trenches after pipe laying/ completion of work. ▪ Complete construction activity by removing all temporary structures, restoring the sub-project and surrounding areas as near as possible to the pre-construction condition.	Construction	Contractor	BESCOM	PMC/BESCOM
44.	Tree plantation	▪ Trees felled will be replaced as per the compensatory afforestation criteria in accordance with the Forest (Conservation) Act, 1980. ▪ Two trees will be planted for every tree lost along the sub-project roads in locations to be identified with support from the BESCOM.	Construction	Contractor	BESCOM	PMC/BESCOM
45.	Risk of accidents	▪ In order to guarantee construction safety, efficient lighting and safety signs shall be installed on temporary roads during construction and adequate traffic regulations shall be adopted and implemented for temporary roads.	Construction	Contractor	BESCOM	PMC/BESCOM
46.	Cultural relics / Chance finds	▪ If fossils, coins, articles of value or antiquity, structures, and their remains of geologic or archaeological interest are found, local government shall be immediately informed of such discovery and excavation shall be stopped until identification of cultural relics by the authorized institution and clearance is given for proceeding with work. All the above discovered on site shall be the property of the Government, and shall be dealt with as per provisions of the relevant legislation. ▪ The contractor shall take reasonable precaution to prevent his workmen or any other persons from removing and damaging any such article or thing. ▪ He shall, immediately upon discovery thereof and before removal acquaint the Engineer of such discovery and carry out the Engineer's instructions for dealing with the same, waiting which all work shall be stopped. ▪ The Engineer shall seek direction from the Archaeological	Construction	Contractor	BESCOM	PMC/BESCOM

S. No.	Issues / Impacts	Mitigation Measures	Period / Phase	Responsibility for Execution	Responsibility for Supervision	Responsibility for Monitoring
		Society of India (ASI) before instructing the Contractor to recommence work on the site.				
47.	Monitoring Environmental Conditions	▪ The contractor will undertake seasonal monitoring of air, water, noise and soil quality through a govt. established laboratory or a recognized monitoring agency as per ✓ Under Section 12 of Environment (Protection) Act, 1986 ✓ Section 17(2) of The Air (Prevention and Control of Pollution) Act, 1981 ✓ Section 17(2) of The Water (Prevention and Control of Pollution), Act, 1974 ▪ The parameters to be monitored, frequency and duration of monitoring as well as the locations to be monitored will be as per the Monitoring Plan prepared.	Regular intervals from pre-construction to post-completion	Contractor	BESCOM	PMC/BESCOM
48.	Clearing of Construction of Camps & Restoration	▪ Contractor to prepare site restoration plans for approval by the Engineer. ▪ The plan is to be implemented by the contractor prior to demobilization. ▪ On completion of the works, all temporary structures will be cleared away, all rubbish burnt, excreta or other disposal pits or trenches filled in and effectively sealed off and the site left clean and tidy, at the Contractor's expense, to the entire satisfaction of the Engineer. ▪ Residual topsoil will be distributed on adjoining/proximate barren/rocky areas as identified by the Engineer in a layer of thickness of 75mm - 150mm.	De-mobilization	Contractor	BESCOM	PMC/BESCOM
49.	Monitoring Operational Performance	▪ The BESCOM will monitor the operational performance of the various mitigation measures carried out as a part of sub-project. ▪ The indicators selected for monitoring include the survival rate of trees, water bodies, status of rehabilitation of borrow areas and utility of double glazing for noise sensitive receptors.	Operation	Contractor	BESCOM	PMC/BESCOM
50.	Orientation of implementing	▪ The BESCOM shall organize orientation sessions during all stages of the project.	Pre-Construction	Contractor	BESCOM	PMC/BESCOM

S. No.	Issues/ Impacts	Mitigation Measures	Responsibility			
			Project Phase	Implementation	Supervision	Monitoring
	agency and contractors	▪ The orientation session shall involve all staff of BESCOM and field level implementation staff of Contractor. ▪ The contractor needs to comply with the Financier's Environmental, Health, and Safety Guidelines.	& Construction			
51.	Handling of flora/fauna found in project sites	▪ The Contractor shall train the workers to handle any accidental finds of important species of flora and/or flora and on the procedures to be followed to intimate the Forest Department, and BESCOM	Pre-Construction & Construction	Contractor	BESCOM	PMC/BESCOM Forest Department
52.	Handling of Natural Habitats and Biodiversity Issues	▪ The BESCOM will ensure that sub-project planning, preparation, implementation and operation and maintenance will follow relevant Acts, Laws. Rules and Good Practices	Pre-Construction & Construction	Contractor	BESCOM	PMC/BESCOM Forest Department

Annexure IV: Social Management Plan - Guidance

S.No	Social Issues	Mitigation Measures	Responsibility		
			Implement	Supervision	Monitoring
PRECONSTRUCTION STAGE					
1	Assessment of Impacts	The BESCOM and Project Monitoring Consultants (PMC) Social specialist shall assess impacts and revise/modify the SMP and other required sections of the project document.		BESCOM	PMC/BESCOM
CONSTRUCTION STAGE					
2	Labour Camp	Provide temporary residential accommodation and other necessary Infrastructure facilities for construction workers. Provide all the facilities, such as ▪ Potable water, ▪ Sanitation facilities ▪ Provision of soak pits ▪ Dustbins – separate dustbins for different type of wastes ✓ Bio-degradable ✓ Non-bio-degradable ✓ Hazardous wastes ▪ Insurance ✓ Workmen Compensation Insurance ▪ Fire safety Arrangements ▪ First Aid Kits Foreseeing the Involvement of women, both direct and Indirect In the construction activities, Implementing Agency (IA) shall ensure certain measures that are required to be taken by the construction contractor towards welfare and well-being of women	Contractor	BESCOM	PMC/BESCOM

S No.	Social Issues	Mitigation Measures	Responsibility		
			Execution	Supervision	Monitoring
		and children during the construction phase.			
3	Temporary Housing	During the construction, the families of laborers/workers should be provided with residential accommodation suitable to nuclear families.	Contractor	BESCOM	PMC/BESCOM
4	Safety Measures	Provision of adequate amount of PPE – Personal Protective Equipment for all laborers (Women and Men) comprising of: ✓ Hard Hats ✓ Reflective Jackets ✓ Boots ✓ Gloves ✓ Goggles ✓ Nose Mask	Contractor	BESCOM	PMC/BESCOM
		Display of safety sign boards: ✓ Caution Boards ✓ Reflective Tapes ✓ Caution Tapes ✓ Safety awareness board			
		All the contractors will follow the respective specifications, safety codes and construction method specified In the codes and good practices.			
5	Health Problems	Every Sub Project should have First Aid Box to provide minimum medical attention to tackle first-aid requirements	Contractor	BESCOM	PMC/BESCOM
		Linkage with nearest higher order hospital (Primary Health Centers – It covers population of 20,000 and is present In rural areas) to refer patients of major illnesses or critical cases and to handle health problems of the workers by providing basic health care facilities through these centers.			

S.No.	Social Issues	Mitigation Measures	Control	Supervision	
		Linkage with other health center which has MCW (Mother and Child Welfare) units for treating mothers and children In the camp. Apart from this, the health center should provide with regular vaccinations required for children.			
		Display Emergency number (Police, Fire and Hospitals) at all subprojects.			
6	Day Crèche Facilities	Provision of crèche should be made for Infants and small children of women workers so that they can leave behind their children In crèche and work for the day In the construction activities.	Contractor	BESCOM	PMC/BESCOM
		Crèche facilities to be provided with at least a trained worker, preferably women, who may take care of the children In a better way. In cases of emergency, a trained worker can tackle the health problems of the children much more efficiently and effectively and can organize treatment linking the nearest health center.			
		Women, especially the mothers with Infants, should to be exempted from night shifts as far as possible. If unavoidable, crèche facilities In the construction camps must be extended to them In the night shifts too.			
7	Education Facilities	Wherever feasible, day crèche facilities may be extended with primary educational facilities or some kind of Informal education facilities could be created at the construction camp as the construction workers are mainly mobile groups of people. Thus, there is a need for educating their children at the place of their work.	Contractor	BESCOM	PMC/BESCOM
8	Participation of Women	Along with other stakeholders, participation and engagement of women and other vulnerable to be ensured during construction.	Contractor	BESCOM	PMC/BESCOM
		Allow women to take part In the consultation process.			
		Ensure that the women are consulted and Invited to participate In			

S.No.	Social Issues	Mitigation Measures	Responsibility		
			Execution	Supervision	Monitoring
		group-based activities, to gain access and control over the resources. Compensation for land and assets lost, being same for all the affected or displaced families, special care needs to be taken by the IAs for women groups, while implementing the process of acquisition and compensation as well.			
		Encourage women to evaluate the project outputs from their point of view and their useful suggestions should be noted for taking necessary actions for further modifications In the project creating better and congenial situation for increasing participation from women.			
		The labour force required for the construction activities has to be of a highly skilled nature, as there is a lot of mechanized work In construction of sub-projects. In addition, there is also a requirement of unskilled labour, where women can certainly contribute.			
9	Capacity Building of Women from Project Affected Families losing their livelihoods	Initiate women's participation through SHG formation In each of the villages affected by the project. These groups can then be linked to special development schemes of the Government.	Contractor	BESCOM	PMC/BESCOM
		Provide separate trainings to women groups for upgrading the skill In the alternative livelihoods and assist throughout till the beneficiaries start up with production and business.			
		Conduct more consultations and open meetings to make other vulnerable to participate In the project activities and record the same.			
10	Protection of Women Workers	Implement Guidelines In all work places for sexual harassment at the workplaceSexual harassment Includes unwelcome sexually determined behavior (whether directly or by implication) as: a. Physical contact and advances b. A demand or request for sexual favors	Contractor	BESCOM	PMC/BESCOM

S.No.	Social Issue	Mitigation Measures	Responsibility	Supervision	Monitoring
		c. Sexually colored remarks d. Showing pornography Any other unwelcome physical, verbal or no-verbal conduct of sexual nature.			
		Exploitation of women is very common In such camps. A strong vigilance should be made to ensure cessation of such exploitation.			
11	Measures for Controlling STD, AIDS	Provisions for means of controlling the spread of such diseases should be made at all sub projects like awareness camps should be conducted for the target people, both In the construction camp and neighboring villages as well.	Contractor	BESCOM	PMC/BESCOM
		Link up with KSACS (Karnataka State Aids Control Society) for awareness generation camps and IEC materials, and supply of condoms at concessional rate (or free) to the male workers may help to a large extent In this respect.			
12	Child Labour	Minors, i.e. persons below the age of 14 years, should be restricted from getting Involved In the constructional activities.	Contractor	BESCOM	PMC/BESCOM
13	Key Legal Provision Related to Women	Ensure Key Legal Provision Related to Women at all projects viz.: • Protection of Women from Domestic Violence Act, 2005 • The Criminal Law (Amendment) Act, 2013 • The Immoral Traffic (Prevention) Act. 1956 • The Maternity Benefit Act 1961	Contractor	BESCOM	PMC/ BESCOM
14	Grievance Redress Mechanism	Grievance Redress System to be set up for the project at following levels: 1. Grievance Register for Labors and others separately. 2. Grievance Redress Committee (GRC) at District level. 3. GRC at state level The grievances resolving period is from one week to one month at	Contractor	BESCOM	PMC/ BESCOM

S.No.	Social Issues	Mitigation Measures	Responsibility		
			Execution	Supervision	Monitoring
		various levels depending on the Grievance. In case of R&R/ Land acquisition it is up to 3 months.			
15	Other Actions	Minimum one-third of the staff and all other Involved agencies (Including consulting agencies) staff should be women. When qualified/ skilled women are not available, women with lesser qualifications/ skills may be employed and trained. They may be encouraged and facilitated to obtain the necessary qualifications and/or skills during the employment. The proposed women personnel shall be available to work at site for at least 50% of the duration of the contract. Women may be replaced during the period of contract, only with women persons of equivalent qualifications and experience.	Contractor	BESCOM	PMC/ BESCOM
		Same wage rate for men and women must be ensured.			
		While selecting community members for training at least half of them should be women and vulnerable persons.			
		The contractor should comply with all the ESMF and RPF requirement.			

Annexure V: EMP and SMP Items for Implementation for Contractors to Quote

Items for Implementing Environmental and Social Mitigation Measures	
S.No.	Description
1	Utility Relocation
2	Tree Cutting
3	Shifting Common Property Resources
4	Project Information Board
5	Watering for Dust suppression
6	Transporting Debris to Disposal Sites
7	Tree Plantation with guards for accidental felling
8	Provision of Safety gear to labour
9	Provision of precautionary warning signs and barricading
10	Temporary Lease of land for Labour Accommodation
11	Adequate Water and Sanitary Arrangements
12	Provision of LPG, Entertainment, etc.
13	Resting place for working women labour (and their children)
14	Rainwater harvesting at construction sites, camps and along drains
15	Improvements/ additions at cultural sites
16	Reclamation of borrow areas
17	Monitoring Environmental Parameters
18	Training for workers and community members
19	Any Other Items